«The Meta-Method of Top-Down Question-and-Answer Design»

Abstract:
This paper presents a meta-method for top-down Q&A(Question-and-Answer) design, created as a foundation for designing an artificial planet.

Contents

Abstract..... 1

DEFINITIONS AND ABBREVIATIONS..... 3

AXIOMATICS..... 4

I. INTRODUCTION..... 5

II. THE METHOD OF TOP-DOWN QUESTION-ANSWER DESIGN..... 5

III. FURTHER USE OF THE METHOD..... 8

REFERENCE..... 9

DEFINITIONS AND ABBREVIATIONS

AP – Abbreviation for Artificial Planet.

Functional purpose of an artificial planet – The core objective or task for which a given artificial planet is created.

FPAP – Abbreviation for Functional Purpose of an Artificial Planet.

Planet type – A classification unit based on the functional purpose of an artificial planet.

Primary question – A fundamental question formulated as follows: "What is the functional purpose of this artificial planet?"

Fabric Planet – A type of AP designed for highly efficient and automated mass production of material goods on an industrial scale.

AXIOMATICS

I. Every project must have a clear, measurable objective.

II. The primary question can be used to determine the FPAP.

III. The task of planetary engineering is interdisciplinary.

I. INTRODUCTION

The problem of planetary construction is an interdisciplinary problem. It follows that to solve it, methods from various scientific disciplines must be used.

These methods must be integrated into a common hierarchy using a meta-method. For this purpose, the method of top-down question-answer design can be used.

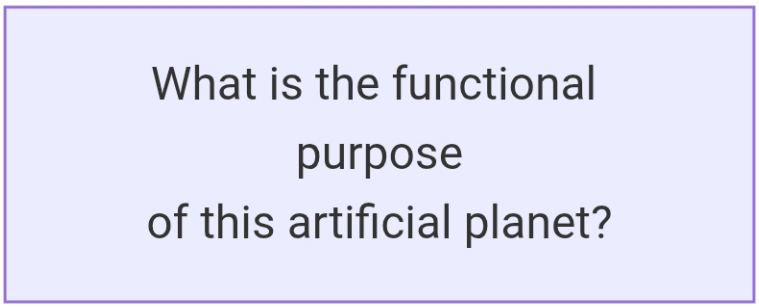
II. THE METHOD OF TOP-DOWN QUESTION-ANSWER DESIGN

The Method of Top-Down Question-and-Answer Design (TDQAD Method) is a meta-method for designing complex systems, based on the sequential decomposition of the initial problem. Its essence lies in the recursive formulation of a system of interconnected questions, where the answer to each question at a higher level determines

a set of more specific questions at the level below, thereby forming a hierarchical tree-like structure.

The primary function of the TDQAD method is to structure the design process, formulate tasks, and organize the engagement of methods from specialized disciplines to find answers to the final questions in the hierarchy.

Let's represent the TDQAD method as a graph. The primary question will serve as the foundation of the graph and will also be the root node.

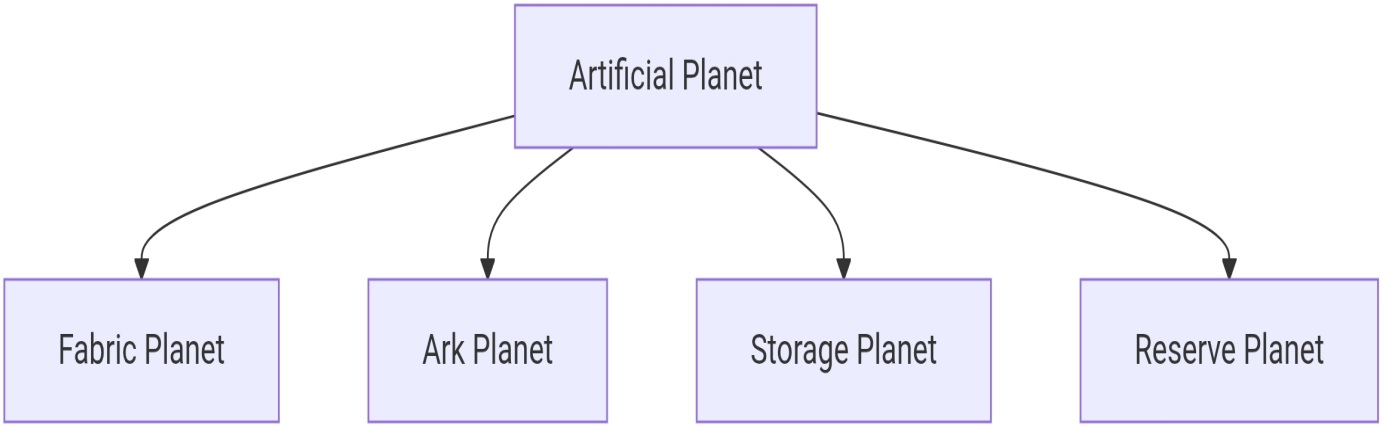


Next, we define the first internal nodes. These will represent answers to the root node's question. There can be an infinite number of answers to this question. Let's define some of them:

– Fabric Planet*

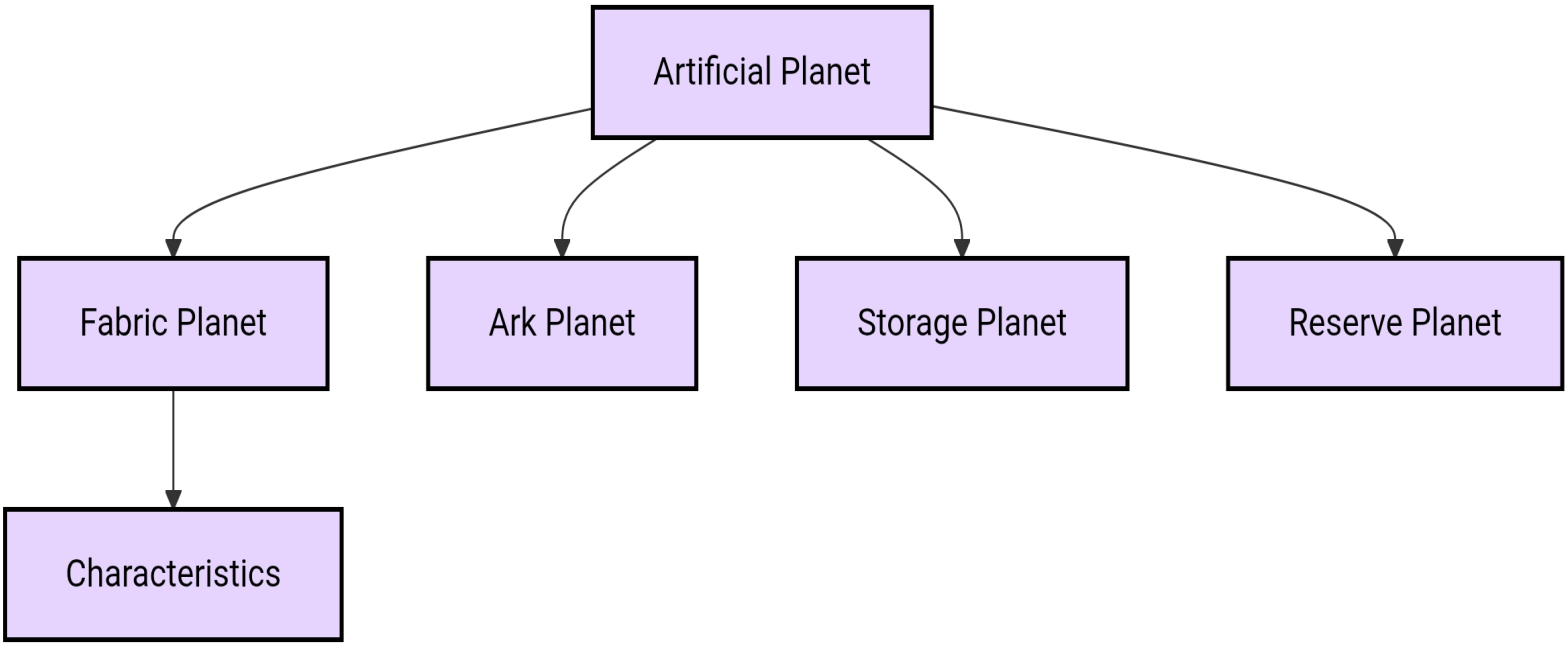
– Ark Planet
– Storage Planet
– Reserve Planet
– ...

Let's connect the root node and the internal nodes via edges and represent them as a graph:



Let's draw edges from "Fabric Planet" to a question-answer group under the general title "Characteristics". Subsequent works will present a more complete map for the"Fabric Planet" type.

*Definitions for planet types other than "Fabric Planet" will be provided in other works.



III. FURTHER USE OF THE METHOD

The key feature of the method lies in its potential for infinite expansion and deepening, allowing for precise question specification.

Important clarifications for graph construction:

· An answer can function either as a leaf or a node.
· The addition of if/else blocks and other graphs elements is possible.

REFERENCE

Top-Down Design:
An Introduction for
New Engineers

From January 2008 High Frequency Electronics
Copyright © 2008 Summit Technical Media, LLC

https://www.highfrequencyelectronics.com/Jan08/HFE0108_Tutorial.pdf